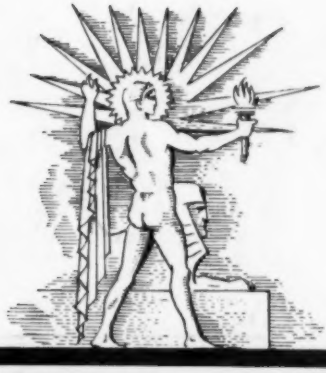
PRICE 15¢

TECHNOLOGY DEPT.

PUBLIC LIBRARY

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •



September 13, 1941

For Tomorrow's Table

See Page 166

A SCIENCE SERVICE PUBLICATION

Do You Know?

For 30 years John A. Lomax has collected recordings of American *folk music* for the Library of Congress.

Peru has 8,000,000 people, of whom 5,500,000 are full-blood or mixed-blood Indians, and most of these live Indian style.

The University of Cincinnati is giving a four-year *meteorology* course to undergraduates who want to be weather scientists.

As many as 50,000 wild ducks and geese have wintered at the St. Marks *Refuge* on the Gulf shore of western Florida.

The U. S. Army's Boeing *bomber* can fly at 27,000 to 30,000 feet, an altitude hard for many of Europe's pursuit planes to reach.

Treating *fabrics* with a new chemical and latex process is said to make them wear longer and also resist moths and shrinkage.

Inadequate *transportation* from mines to seaboard is the bottleneck that has delayed exploitation of Brazil's rich mineral resources.

First *birds* ever banded for scientific identification in the Antarctic were some Adelie penguins, South Polar skuas and a snowy petrel, tagged with numbered bands by the Byrd Antarctic Expedition in 1940-1941.

Baby chicks—not human infants—consume most of the cod liver oil and other vitamin-bearing fish oils produced.

Recordings are used to teach students of *marine engineering* to recognize sounds of correctly running engines, faulty valves, and other significant sounds.

A favorite design for the *cosmetic spoons* on Egyptian toilet tables was made by carving a swimming girl as the long handle, with a fanciful fish, duck or plant being pushed ahead of her to form the spoon's bowl.

Why *frog voices* carry: in many male frogs a pair of vocal sacs open into the mouth cavity, serving as resonators to increase the volume of sound.

Air *raids* from July 1, 1940 to March 1, 1941 killed about 100 people in Great Britain a day, a slightly higher death rate than the traffic toll in the United States.

Selling quantities of *baby haddock*, a practice recently started, is a serious threat to the valuable haddock fishery of the North Atlantic, the U. S. Fish and Wildlife Service warns.

QUESTIONS DISCUSSED IN THIS ISSUE

Most articles which appear in SCIENCE NEWS LETTER *are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.*

ASTRONOMY

What made the craters on the moon? p. 164.

BOTANY

How can you find food in your flower garden? p. 166.

ENTOMOLOGY

How serious is the Japanese beetle menace now? p. 170.

INVENTION

How can your typewritten lines be made to come out the same length? p. 168.

How is paper for money tested for the sort of wear given it in use? p. 168.

MEDICINE

What gland may be at fault for one kind of high blood pressure? p. 167.

What kind of flooring will prevent athlete's foot? p. 168.

MILITARY SCIENCE

What makes the world red for anti-aircraft gunners? p. 165.

What protection against being seen will be worn by Uncle Sam's Alaskan troops? p. 168.

NUTRITION

What proportion of the world's people are without enough variety of food for health? p. 165.

PHARMACY

What drugs previously imported can be grown in the United States? p. 172.

PLANT PHYSIOLOGY

How do scientists know that plant tumors can grow without causal germs? p. 170.

PSYCHOLOGY

What does drinking do to your personality? p. 174.

What fault does a psychologist find with colleges? p. 163.

RADIO

How can you answer the doorbell by radio? p. 172.

RESOURCES

How can land injured by strip mining be restored? p. 169.

Who "roughed it" to find oil for the British in Persia? p. 175.

ZOOLOGY

What famous dogs have joined the Army? p. 165.

SCIENCE NEWS LETTER

Vol 40 SEPTEMBER 13, 1941 *No. 11*

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St. N. W., Washington, D. C. Edited by WATSON DAVIS.

Subscriptions—$5.00 a year; two years, $7.00; 15 cents a copy. Ten or more copies to same address, 5 cents a copy. Back numbers more than six months old, 25 cents.

In requesting change of address, please give your old address as well as the new one, at least two weeks before change is to become effective.

Copyright, 1941, by Science Service, Inc. Republication of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service.

Cable address: Scienserve, Washington.

Entered as second class matter at the postoffice at Washington, D. C., under the Act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and in the Engineering Index.

Members of the American Association for the Advancement of Science have privilege of subscribing to SCIENCE NEWS LETTER, at $3 a year.

The New York Museum of Science and Industry has elected SCIENCE NEWS LETTER as its official publication to be received by its members.

Advertising rates on application. Member Audit Bureau of Circulation.

SCIENCE SERVICE is the Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Henry B. Ward, University of Illinois; Edwin G. Conklin, American Philosophical Society; J. McKeen Cattell, Editor, Science. *Nominated by the National Academy of Sciences:* R. A. Millikan, California Institute of Technology; Harlow Shapley, Harvard College Observatory; William H. Howell, Johns Hopkins University. *Nominated by the National Research Council:* Ross G. Harrison, Yale University; C. G. Abbot, Secretary, Smithsonian Institution; Harrison E. Howe, Editor, Industrial and Engineering Chemistry. *Nominated by the Journalistic Profession:* O. W. Riegel, Washington and Lee School of Journalism; A. H. Kirchhofer, Buffalo Evening News; Neil H. Swanson, Baltimore Evening Sun. *Nominated by the E. W. Scripps Estate:* Frank R. Ford, Evansville Press; Warren S. Thompson, Miami University, Oxford, Ohio; Harry L. Smithton, Cincinnati, Ohio.

Officers—Honorary President: William E. Ritter. *President:* Edwin G. Conklin. *Vice-President and Chairman of Executve Committee:* Harlow Shapley. *Treasurer:* O. W. Riegel. *Secretary:* Watson Davis.

Staff—Director: Watson Davis. *Writers:* Frank Thone, Emily C. Davis, Jane Stafford, Marjorie Van de Water, Morton Mott-Smith. *Photography:* Fremont Davis. *Librarian:* Minna Gill. *Business Manager:* Alvin C. Stewart. *Sales and Advertising:* Hallie Jenkins, Austin Winant. Correspondents in principal cities and centers of research.

PSYCHOLOGY

Colleges Are Schizophrenic, Psychologist Tells Meeting

Failure to Meet New Situations, "Childish" Inability To Manage Own Affairs, Pointed Out as Symptoms

AMERICA's colleges are schizophrenic, Dr. James L. Graham of Lehigh University, told the meeting of the American Psychological Association at Evanston, Ill.

Their mental illness is curable, he indicated. The present world emergency may be the shock that will bring them out of their daydreams into today's realities just as individual mental patients are shocked into sanity with huge doses of insulin or metrazol.

Symptom of the mental illness of colleges, Dr. Graham said, is their failure to change their methods of education to meet changes in our culture from what it was in pioneer days. Parallel to the schizophrenic's regression to childish ways is the college's failure to assume control of its own funds and policies.

Like the schizophrenic, they, too, cling to rituals and are preoccupied with affairs that avoid facing reality emphasizing the developments of individual leadership and rewards in terms of grades or degrees.

Science News Letter, September 13, 1941

Drivers' Defective Vision

DRIVERS with vision below the oculist's rating of 20/30 should be restricted in speed when driving at night, Dr. A. R. Lauer, of Iowa State College, told the meeting. A 30% loss in visual acuity makes it necessary for a driver to have double the light in his headlights that a normal person needs in order to see against the glare of oncoming headlights.

The angle at which the opposing headlight glare hits the eye of the driver is important in affecting his vision, Dr. Lauer found in experiments in which persons in a dark booth tried to read or see dolls in a miniature roadway. Depressing the headlight beam when passing reduces the glare effects to about one-fourth of that experienced with a high beam.

One of the most important factors in reducing vision through glare is the sidewise angle of the approaching light. If it is only one degree from the line of sight, the glare effect is three times what it is at three degrees. Look toward the right shoulder of the road to cut down the glare, Dr. Lauer advises.

It is not necessary to cut down on the brightness of headlights to eliminate glare, in Dr. Lauer's opinion.

"Since headlights, as made today, will not give over one foot candle at the eye height of the driver when meeting a car," he said, "it seems the intensity could be materially increased without producing hazards of glare."

If you walk in the roadway and want to be seen by a driver facing headlight glare, wear light-colored clothing. It takes only about one-fourth as much light for the driver to discern light objects in the face of oncoming lights as it does to see dark objects.

Science News Letter, September 13, 1941

"Lie-Detector" Doesn't

THE so-called "lie detector," which measures changes in the electric resistence of the skin when the suspect hears embarrassing things said to him, would not work very well with drug addicts.

The ordinary level of skin resistance is increased by morphine addiction, Dr. Ralph R. Brown, of the U. S. Public Health Service Hospital, at Lexington, Ky., has found. But the size of the telltale changes in this resistance at disturbing words is decreased. There is less difference between the instrument reading at disturbing words and its reading at words not emotion rousing.

Withdrawal of the drug brings a marked increase in the response to words, especially words concerned with sex.

Science News Letter, September 13, 1941

Education Aids Morale

MORALE, or a good fighting spirit, may depend more on internal factors within the individual than it does on pep talks or the circumstances he faces, the psychologists learned from a report by Dr. Goodwin Watson of Teachers College, Columbia University.

Men with a college education have better morale, Dr. Watson found, than men who have not finished high school. Married men and men with several dependents have better spirits than do single men and men without such responsibilities. Men with any sort of religion have better morale than those with none.

Study of different occupations revealed that morale is lowest among those working at skilled or semi-skilled trades, in factories, or as clerks in offices. It is highest among writers, salesmen, teachers and students.

Science News Letter, September 13, 1941

Psychological Defense

AN ALL-OUT contribution to national defense, broader than military psychology, was urged on psychologists by Dr. Edgar A. Doll, director of research at The Training School, Vineland, New Jersey. Dr. Doll spoke as president of the American Association for Applied Psychology.

At least five major areas of psychological usefulness must be encompassed, he said, in such a total program:

1. The armed forces, where psychologists can aid in selection, training and classification of men, in preservation of morale, and psychological warfare.

GREEN VS. WHITE

An American soldier tries out the new reversible ski uniform, wearing outside the forest green that blends with conifers.

(See page 168)

2. Business and industry.
3. Agriculture.
4. Home defense.
5. Psychology itself, where scientists must be given training for new duties and new students must be trained.

Mentally defective men have very little place in the mechanized military forces of modern warfare, Dr. Doll said. The psychologist's job in this area, therefore, is partly to keep mental defectives from induction.

But mental defectives can play an important part in national defense if properly directed by psychologists, he indicated.

In industry and in distribution, there are many tasks which can be done successfully by mental defectives, releasing mentally normal men for military duty.

In home defense, there are also tasks that can be undertaken by the dull.

"It behooves us," Dr. Doll said, "to study the experience in this regard in England where the role of the mental defective in home defense has received special attention and has produced effective results."

On the farm, the unskilled tasks and social conditions favor the employment of mental defectives.

Anticipating the possible role of public institutions for the feeble-minded in case of war, Dr. Doll prophesied:

"It is not inconceivable that institutions for the feeble-minded might become hospital centers in respect to which many useful services might be performed by high-grade mental defectives, both men and women."

Science News Letter, September 13, 1941

ASTRONOMY

Moon's Craters Not Made By Meteor Bombardment

Earth's Satellite Has Atmosphere Which Protects Its Surface; Craters Mainly Due to Volcanic Action

AN OBSERVER on the surface of the moon would see as many "shooting stars" in its dark, star-filled sky as are seen at night here on the earth, declares Dr. Roy K. Marshall, of the Fels Planetarium, Philadelphia. This contradicts directly the statements found in most texts and popular books on astronomy that the moon has no atmosphere, and that the thousands of craters on the moon were formed by the impact of enormous meteorites during past ages.

Dr. Marshall presented his thesis before the American Astronomical Society, at Yerkes Observatory. His paper was presented for the purpose of bringing to the attention of astronomers existing theories which had been overlooked or forgotten, Dr. Marshall stated. This is particularly because popular writers have recently devoted so much space to the meteoric theory and so little to the proposal that the moon's craters are the result of volcanic action.

The tendency to compare Meteor Crater, a huge pit in the Arizona plateau, with the superficial appearance of lunar craters, has resulted in the misinterpretation of other facts about the moon. For instance, our satellite has an appreciable atmosphere which is as effective in destroying meteors as is our own air. Owing to the low surface gravity of the moon, where a 150-pound man would weigh only 25 pounds, the density of the moon's air might be only one-millionth that at the earth's surface, but the two atmospheres would be of equal density at a height of 84 miles. Above this point, the moon's air would be denser than the earth's.

For the earth, the average "shooting star" starts to shine at a height of 80 miles, and so it would on the moon. It will not be slowed down as quickly in the moon's thinner air at lower levels, but would burn up just about as fast as in the earth's air. Seldom would a meteor strike the lunar surface hard enough to produce a crater, just as on the earth, where in the past 100,000 years or so only 200 or 300 meteorites have struck which could make real craters. The number for the moon is only 20 or 30 meteorites, and in that time there would be practically none producing craters as large as Meteor Crater, which is nearly a mile wide.

If the moon had absolutely no atmosphere at all, Dr. Marshall said, meteors should strike its surface with their average space velocity of 30 miles a second. In that case, we ought to observe the larger ones striking as pinpoint outbursts equal in brightness to a first-magnitude star, and occurring once in every three or four days. Furthermore, if no air slowed them down, one or two craters large enough to be seen in our telescopes should be made on the moon every year. No permanent changes of this nature have ever been detected, although lunar formations a few hundred yards across have been repeatedly observed.

According to Dr. Marshall, the sizes of lunar craters, especially the hundreds measuring upwards of four and five miles, uphold the volcanic theory. A lunar crater 40 miles wide ought to be 10 miles deep, if formed by an explosion or by the impact of a huge meteor. But some lunar craters have floors which are level with or higher than the plain outside, or even dome-shaped, similar to the laccoliths found on the earth.

Laccoliths are terrestrial formations produced by the flow of lava and igneous material underneath the surface layers of the earth, causing a swelling upward into a dome or bubble. The bursting or subsiding of such bubbles has produced the craters of Hawaii, which are markedly different from the craters of volcanoes, such as Vesuvius.

Lava flows have covered great portions of the moon and the earth alike, making the so-called lunar seas and the formations which eventually became the moon's craters. Some lunar laccoliths are still seen in an arrested state, some have domes a mile or more high, others have begun to collapse. Dr. Marshall showed photographs of the moon illustrating all stages of such development.

The lunar atmosphere may contain carbon dioxide, the astronomer from the Franklin Institute said, and possibly oxygen, since these are the heaviest gases in the earth's atmosphere, and might remain on the moon long after lighter gases, such as hydrogen and water vapor had escaped. Even the theories of Sir James Jeans, which have been considered as conclusively denying the moon an atmosphere, do not prohibit the presence of carbon dioxide in appreciable amounts.

Observations of occultations of stars by the moon will not reveal this carbon dioxide air around it. Nor will the flashes of even brilliant meteors in the

lunar skies be bright enough to be seen at this distance.

"But that they occur must be as certain as that the brighter flashes which would occur on an airless moon have never been observed," concluded Dr. Marshall.

Science News Letter, September 13, 1941

NUTRITION

Three-Fourths of World Ill-Fed In Normal Times

Only Hope for Improving Human Nutrition Lies in World Wide and Economic Peace After This War

THREE-FOURTHS of the world's 2,000,000,000 people depend so heavily on potatoes and cereal crops for food that their bodies are likely to suffer damage from the ill-balanced diet.

So it appears from an impressive survey of what the world is accustomed to eating in such comparatively good times as the years before 1939. Dr. Merrill K. Bennett of the Food Research Institute, Stanford University, has reported the survey to the *Geographical Review* (July). He finds low income levels to blame for a great deal of the world's monotonous diet habits. And he declares that the only hope for improving human nutrition lies in a world-wide and economic peace, as well as a military and political peace, after the present war.

"The United States, with 130 million people, is conspicuously the largest national group in the world," Dr. Bennett states, "to enjoy a diet composed of cereals and potatoes to as small an extent as 30 to 40%."

All the other six countries that have national diets of this standard total together only about 85 million people. These are: Switzerland, Sweden and the United Kingdom in Europe; Canada, Australia and New Zealand.

All of Asia, excepting Japan, lives on 80 to 90% cereal and potato fare, in terms of calories. So does a great area of Africa, and also European Soviet Russia, says Dr. Bennett. The Americas and Australasia probably have no national groups accustomed to this degree of monotony, he points out. Japan is in the class of having a diet from 70 to 80% in the grain and potatoes class.

Southern Europe and most of South and Central America eat 60 to 70% cereals and potatoes; the rest of Europe ranges from 40 to 60%. A really liberal diet, according to one American nutritionist, would contain only 21% of this food.

To illustrate for Americans the monotony of such diet, Dr. Bennett shows that an American man who lived on 80% cereals and potatoes, and consumed 3,000 calories of energy value a day, would have just 600 of those calories in foods other than grain and potatoes.

One liberal serving of beef or chops would alone use up the 600. Or instead, he might add these to his day's ration of one pound of white potatoes and one and one-quarter pounds of flour or meal: an apple, half an ounce of sugar, an ounce of bacon, half an ounce of vegetable oil, an ounce and a half of dried beans, half a pound of cabbage. These would add up to 600 calories. "Flavoring materials," most Americans would call this, says Dr. Bennett.

Religious taboos and other psychological factors may keep some countries in a groove of eating an ill-balanced diet and suffering the consequences in malnourishment, but Dr. Bennett concludes that the chief reason for this condition in the world is poverty. Nations, like families, he says, presumably eat mainly cereal foods and potatoes because they cannot afford variety.

Science News Letter, September 13, 1941

ZOOLOGY

Antarctic Dog Veterans Join Up for Army Service

THEY DIDN'T register for defense duty, but nearly 40 dog veterans that saw hard exploration service with the U. S. Antarctic Expedition in 1939-1940 are among the "selectees" who will aid American defense in the North this winter.

Thirty-seven out of 40 sled dogs have already made good in their New Hampshire training camp and will go to Newfoundland posts for duty in November, according to reports received by the War Department.

Making good, in their case, means chiefly that the canine recruits have built up their fitness, by a strict regime of conditioning, like athletes, so that they can stand a winter of work in the cold. Antarctic exploration work is hard on dogs. Some of the canine veterans had become afflicted by snow blindness, as humans are when their eyes cannot stand the glare on ice and snow. The snow-blind dogs would run around wildly, and could not see well.

Newfoundland winter will be a comparatively mild experience for these dogs, the Remount Division of the Quartermaster Corps believes. Cold will be far less severe than South Polar blizzards. The dogs can have a better diet. Besides Army sergeants with veterinary medical knowledge, the dogs' trainers include a man who worked out several tight-packed rations for the Antarctic.

If the Antarctic dog veterans make good, the Army expects to expand the sled dog branch of the service, since dogs can be valuable in transport in the North beyond railway heads and in the interior. Huskies at their training kennel in Wonalancet, New Hampshire, are reported apt at learning "Gee" and "Haw" commands, just as army mules do.

Like soldiers on maneuvers, Army dogs are using ersatz equipment when need be. To imitate winter snow conditions in snowless New Hampshire in summer, the sergeant in charge of the dogs rigged up a sled on wheels with a hand brake.

Science News Letter, September 13, 1941

MILITARY SCIENCE

Anti-Aircraft Gunners Use Red Glasses

THE "red world of war" becomes a literal vision to anti-aircraft gunners firing tracer shells from the small-caliber pompoms—37 and 40 millimeter pieces that spit out rapid streams of death like over-size machine-guns. The gunners are now equipped with red glasses, because through them they can see the flaming course of the little shells in better contrast against the sky. The new glasses are said to work better than even binoculars with filters, especially on hazy days.

Science News Letter, September 13, 1941

BOTANY

Wealth From Weeds

Plants Now Neglected, or Grown Only as Ornamentals, May Be Added to Tomorrow's List of Profitable Crops

By DR. FRANK THONE

WEALTH for tomorrow may lurk unsuspected in some wayside plant you pass every day—or even in some weed that you hoe out of your garden-patch, grumbling at its being in your way. It may be waiting only for some one with the scientific curiosity and patience needed to give it a boost, ready to reward him with fame as well as fortune. Who can tell?

It is only within the past few years that such an idea could be proposed as anything but the wildest kind of speculation. Botanists have learned new magics that should make it possible to take almost any kind of plant, and by lavishing sufficient care and thought upon it to make it valuable for food, or fiber, or flavor, or beauty, or perfume.

Outstanding among these magics are three: X-rays and other radiations, to bombard heredity-bearing chromosomes and change the course of evolution; colchicine, to double chromosome numbers and turn ordinary plants into giants; indole-acetic acid and other growth-promoting substances, to pinch-hit for bees and the pollen they carry, and produce fatherless fruits without seeds. With powerful aids like this at their command, plant scientists may well tackle any kind of a job in plant alchemy with confidence of producing just what is wanted.

Not Yet Begun

Curiously enough, plant geneticists have not yet begun to adventure in the wild. A tremendous amount of work is being done, but it is all being done on the standard, old-line grains and vegetables and fruits and flowers that have been grown in our fields and gardens for dozens of centuries. They have improved these vastly, but they have added very few to their number. In agriculture at least, there is no new thing under the sun.

No new thing, and for an amazingly long time. Of our major crops—wheat, corn, rice, potatoes, cotton, sugarcane, and a score of others—there is not one whose early history is known. They were all cultivated, in Old World or New, in the New Stone Age, ten thousand years or more ago. We are merely carrying on with what our ancestors left us, making only minor additions to the stock.

Plant scientists of today are hardly to be criticized for sticking to the old crop plants for their experiments. The techniques are all new, and the possibilities of the old reliable breeding stocks are known and by no means exhausted. Moreover, most of the scientists are employed either in the U. S. Department of Agriculture or in State Experiment Stations, where the taxpayers' representatives are likely to be sharply insistent on "practical" work. So pioneer research, in the effort to find uses for the useless, is likely to be confined at first to endowed institutions and to serious amateurs working on their own.

You can plan an interesting and amusing summer game with yourself, by sizing up a plant—any plant—and deciding what would need to be done with it to make it profitable. No need to dismiss any weed as worthless. Remember, all our crop plants were wild plants once. Wheat and corn were once wild grasses, roses and lilies just wild flowers. Tobacco is still called "the weed". Let your imagination, then, roam untrammeled, assured that the new genetical magics can make your dreams come true.

Early plant breeding did remarkable things to potatoes, between the discovery of America and the present time. The first potatoes that white men saw were knotty little nubbins with deep-set eyes, and that despite the fact that South American Indian farmers had been raising them for nobody knows how many centuries. Slow improvements, during the past 450 years, have developed the smooth-skinned "hippopotopotatoes" that come out of the baking oven nowadays.

Tobacco Was Weedy

That other great Indian gift, tobacco, was also a bit on the weedy side when Columbus brought the first specimens back home with him. At least, the earliest published pictures show it with a branching stem and relatively narrow leaves, not at all like the wide, thin, delicate-textured Sumatra wrapper tobacco of today. What its flavor was like we can only guess—shuddering. Perhaps England's Puritan king, James I, had

NEEDS NO VINEGAR

Some people like the taste of oxalis leaves, just as they are. If induced to grow several times as big, they might be good as a self-flavored salad ingredient.

some cause for his hostility to the poisonous weed.

There are any number of cultivated plants that represent only one out of several possible species. Nobody knows why the prehistoric farmers chose this one, neglecting the rest. Thus, only one kind of tobacco is grown for smoking, out of a dozen and a half known species of *Nicotiana*. Of 21 species of banana, only about three are rated as edible, and only one of the three is cultivated on a large scale. It seems only reasonable to suppose that in kinships like these, there may be some neglected sister, some ignored Cinderella, which might surprise us all if she had a chance.

We carefully cultivate apples, quinces and pears, but give almost no thought to new and tasty flavors that might grace our tables if we should increase the size of red haws, or the edible hips of wild roses.

Do you like rhubarb? That sharply acid flavor that so many find attractive is present in many plants, some of them not at all closely related to rhubarb. There is that attractive little wild flower, introduced into cultivation to some extent, the oxalis. Its name comes from the Greek word meaning sour. If its leaves, now small, could be expanded to half-a-dozen times their present span, might it not be a very nice addition to the salad bowl?

None Too Useless

No weed need seem too useless, even too repulsive. Can you imagine anything less attractive than skunk cabbage? Yet those who are cunning in the ways of the woods declare that they can cook its young leaves, when they come up new in earliest spring, into a really tasty dish—and no ill odor. Beneath the soil surface is a thick, starch-filled rootstock. But it is believed to be poisonous. Could the new magics of botany exorcise both ill odor and reputed toxicity? Why not?

One major contribution may be made by research to make useless plants useful, in rendering fruitful huge areas that are now unsuitable for ordinary cultivation. This country has millions of acres of desert, other millions that are too wet for farming. It has been our practice to irrigate the first when water is available, and to drain the second. But water is not always available for irrigation, and drainage has ruined old lake bottoms and swamps oftener than it has made good fields of them.

Better, it would seem, to find valuable plants that will grow in such places—or to use botany's new magics to turn the plants that now grow there wild into forms that can be cultivated in the same places at a profit. Thrifty Orientals make food (and appetizing food, too) out of the seeds of the water chestnut and the rootstocks of the wild lotus. With us, the water chestnut is simply a floating menace to navigation in a few of our eastern rivers, where it has become introduced. The lotus, which occupies thousands of acres of wet lands in our great interior valley, is at present only a beautiful wild flower. Yet we, too, may some day find it appetizing to become lotus-eaters. There are many other wet-land weeds of promise (cattails and arrow-leaf for example) that have starch-filled roots or rootstocks. We may eventually find it more profitable to farm the wet lands as they lie, rather than take the risk of draining them.

SMALL, THOUGH TASTY

Rose hips are nice to nibble at, and one or two species are used a little, in salads. Why not grow 'em as big as apples?

Improve Desert Plants

In the desert, it might be more profitable to improve desert plants than to go to great expense to put irrigation ditches into at least the less fertile lands. Tumbleweeds have been used in their younger, tenderer stages of growth, as fodder for livestock in drought years. It might be worth while to work on the tumbleweeds, to see if the stringiness can be taken out of the stems, the leaves made larger and tenderer, so as to make them really worth-while stuff for hungry cattle to eat.

In the dry lands, too, are many species of wild legumes, both on the wild open lands and in the woods. Legumes have double value: they capture nitrogen from the air to enrich the soil, and some of them, like clover and alfalfa, are good fodder. But alas, some of the most abundant of the dry land legumes are poisonous, like the loco weeds and some of the wild lupines. Could this toxicity be bred out? Why not?

Research of this kind, long-shot efforts to make marginal and submarginal lands valuable by raising the value of plants that naturally grow on them, might well be made a part of the great program of world reconstruction that must be undertaken when peace comes again to the earth. If the schemes look visionary, they are certainly no less hopeless than the present apparent prospects for peace. Yet the problems of peace may replace those of war sooner than we look for, and we should be ready for them when they arise.

Science News Letter, September 13, 1941

MEDICINE

Hypertension Clue Seen In Enlarged Adrenals

COCKED-hat-shaped glands above the kidneys, called adrenal glands, hold a clue to the cause of one kind of high blood pressure, Dr. James F. Rinehart, Dr. O. O. Williams, now at Phoenix, Ariz., and Dr. William S. Cappeller, now with the U. S. Army, declare in a report from the University of California Medical School.

The outer part of these glands, which produces a life-sustaining hormone, was almost regularly enlarged in patients who died of the kind of high blood pressure technically known as essential hypertension, the doctors found. Comparable changes are rarely found in patients who do not have high blood pressure.

Overactivity of these adrenal glands may be the cause of the high blood pressure, but the scientists pointed out that the enlargement with presumable overactivity of the glands may be a result and not a cause of the high blood pressure.

Dr. Rinehart emphasized that the study does not suggest the use of surgery on the adrenals but calls for further study of the relationship between these glands and high blood pressure.

Science News Letter, September 13, 1941

MEDICINE

Copper Cement Flooring Prevents Athlete's Foot

DANGER of getting athlete's foot and warts on the soles of the feet from swimming runways, locker and shower rooms may be reduced by use of a copper cement flooring material called hubbellite, Dr. W. L. Mallmann, of Michigan State College, reports. (*Journal of the American Medical Association*, Sept. 6.)

When the fungus that causes athlete's foot was spread on blocks of glass plate, ordinary cement and hubbellite, Dr. Mallmann reports, the fungi multiplied on the glass plate and ordinary cement to double and triple the original number after four and eight hours. On the hubbellite the fungi were reduced from 72,000 to 74 after eight hours.

A practical test of the hubbellite was made by placing an eight-foot strip of it across a hallway in the college gymnasium in a location where all bathers had to travel over it between the showers and lockers. The number of germs, both bacteria and molds, was always lower on the hubbellite than on the adjacent ordinary concrete floor.

Hubbellite was developed by D. S. Hubbell at the Mellon Institute for Industrial Research at Pittsburgh. It is said to owe its germ-killing property to the minute amounts of a copper compound which are released from the flooring when it is wet. It was effective not only when wet with water but when milk was smeared over it, Dr. Mallmann found, suggesting its usefulness on the floors of dairies and kitchens.

Science News Letter, September 13, 1941

MILITARY SCIENCE

Two-Way Ski Suits to Make Our Troops Hard to See

WHEN winter comes, Uncle Sam's Alaska Defense Force will have a chance to try out brand new equipment, designed to make American ski troops hard to see and ready for anything in the Far Northern field.

Two-way ski suits, green outside and white inside — or vice versa — are an American improvement on cloaks and hoods of snowy white that turned Finns into phantoms in winter fighting. The American reversible uniforms, in War Department estimation, will place the Alaska Defense Force among the best equipped snow troops in the world. The green-white outfits, pictured on page 163, are believed unique.

Camouflage, wind resistance and warmth are the three main requisites of ski uniforms which the U. S. Quartermaster Corps has taken into account, but the ski outfit is also water repellent.

Also especially designed for American ski troops is a miniature stove weighing less than three pounds, tough enough to stand being hurled across a room, and capable of burning gasoline, kerosene, or alcohol. It provides warmth or a means of cooking food, in an emergency, and is so frugal in its use of fuel that a pint of fuel is enough to cook one soldier's meals for ten days.

Protection against cold as severe as 40 below zero is provided in a special sleeping bag for the American in Alaska. Keeping the weight of the three-layer bag down to less than 11 pounds, the Quartermaster Corps figures that it can be carried in a soldier's knapsack. A canopy attached to the bag, to protect the sleeper's head at night, becomes the carrying case for the bag by day.

Science News Letter, September 13, 1941

INVENTION

Device Varies Spaces To Justify Lines

CHANGE of the spacing between typewriter characters at the will of the operator can be obtained by an ingenious device recently patented. Without this device, when the operator wishes to justify the line with respect to the right hand margin, i.e., to make the lines come out even as in printed matter, he can do so only by increasing the spacing between words to two or more times the normal amount. This is awkward and conspicuous, and moreover the line can only be lengthened, never shortened. With this device, the operator can increase or diminish the spacing, not only between words but between the separate letters of a word, by an adjustable fraction of the normal spacing. (*Harry H. Bernhard, Patent No. 2,233,092*)

Science News Letter, September 13, 1941

INVENTION

Illuminated Umbrella For Dark, Rainy Nights

USEFUL on black-out nights would be the illuminated umbrella stick, a recently patented invention. A light at the tip warns approaching automobiles; a light in the handle illuminates the pedestrian's path. (*Anna L. Campbell, Philadelphia, Patent No. 2,246,836.*)

Science News Letter, September 13, 1941

IN SCIEN

INVENTION

Automatic Feeder Keeps Dishwater Soapy

A DISHWASHING compound in the form of hard briquets simplifies the problem of keeping the wash water at a uniform strength. They are used with an automatic feeder which controls the addition of the compound to the water, so it is always kept at the strength to cleanse tableware most effectively. (*Mathieson Alkali Work, N. Y. C.*)

Science News Letter, September 13, 1941

INVENTION

Machine Tests Wear Of Paper for Money

A MACHINE that first crumples paper intended for currency into a small wad, and then by means of mechanical fingers straightens and smooths it out, has recently been developed by F. T. Carson and V. Worthington of the National Bureau of Standards. The crumpling and straightening are repeated many times until in the course of a few minutes the paper has received as much of this treatment as it would in several months of actual use as money.

Next the paper is tested to determine how much damage it has received. Strength and stiffness are sometimes measured, but a valuable new test, also developed by Mr. Carson, accomplishes many purposes by a single measurement. This is a measurement of the rate at which air will flow through the paper under a given pressure. This determines how much the structure has been opened up, which is closely related to the roughness or fuzziness of the surface, its ability to catch dirt and absorb oil and grease and the probability of impairment of printed images and lettering on the paper, as well as the change in strength and stiffness.

The replacement of worn-out paper currency costs the government several million dollars every year. Research is going on continually for the improvement both of the papers and of the machines for testing them.

Science News Letter, September 13, 1941

NE FIELDS

RESOURCES

Trees Salvage Waste Land Left By Strip Coal Mines

TREES by the million are being used to salvage the tumbled heaps of waste land left after strip coal mining operations in Illinois. The plantings are carried out in a cooperative program involving the mine-owning companies and the Illinois Division of Forestry under the general direction of Joseph P. Schavilje. (*Journal of Forestry,* August)

Strip mining is resorted to when the coal seam is fairly close to the surface. Huge steam shovels scoop away the soil, piling it in long, parallel ridges and laying the coal bare for removal. There are 102 strip mines, large and small, now operating in the state.

Since topsoil, clay, shale and waste coal are mixed in hopeless confusion in these long spoil-heaps, the land is lost to any possible agricultural use. However, trees will grow on it. Of the species tried thus far, black locust has proved the favorite, with black walnut, cottonwood, and several kinds of yellow pine also in the running.

Planting stock is provided by the Division of Forestry and the mining companies supply the labor. It costs between one and two cents apiece to plant the little trees. Something over 16,000 acres are thus far included in the planting projects, with more than a million trees a year getting started. Future strip mining operations may affect nearly 64,000 acres of land in Illinois.

Science News Letter, September 13, 1941

ENGINEERING

Fluorescent Lamp Factory Has Germless Air

A HUNDRED modern fluorescent lamps a minute will be produced at Westinghouse's new factory in Fairmont, West Virginia, where artificial daylight illumination, fluorescently produced, dustless air-conditioned atmosphere and a completely blacked-out windowless structure give the maximum in good working conditions.

Daylight indoors is obtained with fluorescent lamps which the plant manufactures. The lighting is unusual because all lamps are of a particular shade of white known as 3500 Degree White which makes feminine complexions normal in appearance. Approximately 75% of the employes are girls.

The volume of light is carefully controlled and directed so as to heighten visibility and to eliminate glare. General illumination is maintained at 45 footcandles, which is extremely good when it is considered that the average in the nation's industrial plants is about 10 footcandles. Where close work puts unusual demands upon eyes, local auxiliary lighting raises it to 100 footcandles.

The main building, a one-story structure, is so big that four football gridirons could be placed in it with ease. From one end to the other, it is 885 feet long, comparable to a couple of good city blocks. From side wall to side wall, the distance is 220 feet.

Nowhere in the entire plant are there any stairs, nor anywhere about the grounds. Carefully graded ramps are used to pass from one level to another.

Dust is taken from the air by electricity. Each particle is charged electrostatically and drawn to a metal plate where it adheres. A battery of more than 100 sterilamps stands guard in the air-conditioning system, radiating invisible ultraviolet rays which kill approximately 95% of the bacteria in the atmosphere passing through the ducts.

Science News Letter, September 13, 1941

RADIO

Alloys Speed Television Through New Invention

A RECENT patent assigned to the Radio Corporation of America covers a use of magnesium alloys which may speed television and be of use in other means of electrical amplification. This patent, 2,233,276, was granted to Dr. Vladimir K. Zworykin, associate director of the RCA Research Laboratories, and two of his colleagues, Humboldt W. Leverenz and John E. Ruedy.

The alloy is used as a "secondary electron emissive electrode." When a few electrons hit such an electrode, many more are given off. A series can be used in a "multiplier tube," to give great amplification. Previous methods of preparing such electrodes were expensive and complicated, and the results very unstable. The inventors have devised a much simpler method of preparing such electrodes, which work satisfactorily even at high temperatures.

Science News Letter, September 13, 1941

INVENTION

New Training Device Lifts Parachutists

A TRAINING apparatus for parachutists that eliminates the elaborate, costly tall tower hitherto used, is one of the inventions on which patents have recently been issued by the U. S. Patent Office.

The device looks as if it might have received its inspiration from the popular spot in amusement parks, where an upward blast of air blows the girls' skirts around their ears. The hopeful candidate for parachute honors stands on a platform, with his parachute draped over a vertical pipe. A blast of air fills and lifts it. Then from a second pipe a more powerful blast blows parachute, candidate and all into the air. Once beyond the range of the lifting blast, he proceeds to drift down.

The inventor, G. G. Serkau of Montreal, claims that his device will cost much less than the tower setup, and will be far easier to transport from one training field to another. It comes much nearer to simulating actual service conditions, too, he says. Obviously, the invention is also adaptable for amusement purposes.

The invention is covered by patent 2,253,586, which has been assigned to F. W. Zelcer, of New York City.

Science News Letter, September 13, 1941

PHYSIOLOGY

X-Ray Saves Animals From CO Poisoning

X RAYS saved the lives of animals nearly dead from carbon monoxide poisoning, in experiments reported by Dr. John A. Cameron of the University of Missouri.

Rats and monkeys were used in pairs. Each pair was exposed to carbon monoxide until near the death point. Then one of the animals was given a heavy dose of X-rays on the underside of its body; the other was left untreated, as a control.

"In about half the cases the X-rayed animal was active and alert after about five minutes; the control dead," Dr. Cameron stated. "In the remaining trials the recovery time of the X-rayed animal was reduced to two-thirds that of the control; often to one-half or less."

Spectrographs of the blood of the animals showed that the carbon monoxide content was actually reduced after X-ray treatment. How this was brought about, Dr. Cameron is not yet prepared to state, although he suggested several possibilities.

Science News Letter, September 13, 1941

PLANT PHYSIOLOGY

Transplanted Plant Tumors Grow, Free of Causal Germs

Cut Up, the Pieces Grew and That Was Repeated Again and Again Without Original Germs Appearing

PLANT TUMOR tissue, free of the bacteria that originally provoked its growth, has been successfully grafted into healthy plants and has grown and produced tumors there, in carefully controlled experiments by Dr. Philip R. White and Dr. Armin C. Braun of the Rockefeller Institute for Medical Research at Princeton, N. J. (*Science*, Sept. 5)

Plant tumors, commonly known as crown galls, have long been known to be caused by a germ, technically titled *Phytomonas tumefaciens*. Transplanted bits of these tumors have been shown to produce tumors in healthy plants. However, the assumption has always been that these transplanted pieces of tumor tissue carried with them the germs that provoked the new unhealthy growth.

Drs. White and Braun have now shown that the continued presence of the germs is not necessary for successful transplantation. The situation seems to be analogous to that obtaining in the field of animal cancer research, where cultures of sterile malignant tissue, introduced into the bodies of mice or other animals, take hold and grow as well as if they had arisen spontaneously.

The two scientists cut up pieces of plant tumors from sunflower stalks under carefully aseptic conditions. They planted these in dishes of a nutrient in which plant tissues are able to continue growing when detached from the parent stock. For the development of this culture technique, Dr. White was awarded a prize at the last meeting of the American Society of Plant Psysiologists.

The tumor tissues grew, increasing considerably in size. They were cut up and replanted to grow again. This process was repeated five times. Close watch was kept for the presumptive causal germs but none appeared, although the culture medium is known to be able to support their growth. The tissues were sterile, so far as the most careful tests could indicate.

Then fragments of this sterile-grown plant tumor tissue, five removes from its parent stock, were inoculated into the stems of healthy young sunflowers. Development and growth of entirely typical plant tumors followed. And repeated examination of tissues from these new tumors has again failed to disclose the presence of any of the originally causal germs. The tissues themselves had taken on the capacity to produce tumors without the intervention of the germs.

Science News Letter, September 13, 1941

ENTOMOLOGY

Japanese Beetle Reduced To 'Normal Nuisance'

JAPANESE beetle, one of the most alarming insect pests that ever invaded America, shows signs of "settling down" and becoming only a "normal" nuisance instead of a veritable scourge. Evidences pointing in this direction have been turned up by entomologists working at the New Jersey Agricultural Experiment Station at New Brunswick.

Maps of the distribution of the beetle, made in successive years, show that infestation is always worst in newly invaded territory. The first map, made when only northern New Jersey was afflicted, shows a limited area, all black. The next map, showing conditions after the active spread had begun, shows a lighter infestation in the original area, with the black of severe infestation in the newly occupied regions. At present the map is black from Washington, D. C., southward into Virginia, with the black frontier on the west well out into Pennsylvania.

Principal reason for this lessening of severity appears to be the overtaking of the beetles, especially in the larval stage, by their natural enemies—the phenomenon known as biological control. This arises partly in the course of nature, but it is assiduously promoted by federal and state entomologists.

Most promising of biological controls thus far found are the bacteria that cause the "'milky disease" of the beetle's larvae or grubs. It wipes them out by billions, greatly reducing the infestation where it is prevalent.

Entomologists carefully inoculate large numbers of grubs and after they are thoroughly riddled with the disease dry their bodies and grind them up into a white powder containing vast numbers of bacterial spores. They plant quantities of this powder in heavily infested areas, and let natural distribution take care of the rest.

One of the latest discoveries in this field, made by researchers of the U. S. Department of Agriculture, is that adult female beetles, which are themselves not subject to milky disease, may serve as distributing agents. They come to maturity under ground, like June beetles. As they crawl to the surface, bacteria present in the soil may cling to their bodies. Then, when they alight later on to lay their eggs, they unwittingly provide for the destruction of their own offspring by shedding some of the bacteria they have been carrying.

Science News Letter, September 13, 1941

PUBLIC HEALTH

Isolation Placard Is Symbol of Defense

By WALTER L. BIERRING, M.D.

Commissioner, Iowa State Department of Health

PROBABLY because no one likes to have labels attached to them or to their property, many persons and families take affront when the public health officer tells them it is necessary to post an isolation placard on their houses. Some even go so far as to ask their doctor not to report they have a communicable disease. Others rebel when the health officer informs them it must be done, and the upshot is that some succeed in avoiding isolation and thereby contribute to the spread of disease in their community and neighborhood.

Their excuse in many instances is that the disease which is present is not seri-

● RADIO

Thursday, September 18, 2:45 p.m., EST

On "Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Thorfin Hogness, of the University of Chicago, will report a meeting on vitamins.

Listen in each Thursday.

---

ous enough to warrant isolation. They say, "It's only a case of measles," or mumps or scarlet fever or one or another of the more common communicable diseases, and won't do any harm.

But they forget that the same disease may be more serious if contracted by another person. They forget that illness keeps children from school, men from their jobs, women from their work. They forget that one infectious case, exposed to others, may set an epidemic raging, disturbing the life of the entire community. They forget that communicable disease is public property.

And their forgetfulness, costly in times of peace, can be even more costly now in this period of national emergency. Observing the rules of isolation is a small thing which families that develop communicable diseases can do to help the national defense program. Measles, mumps, scarlet fever, chickenpox and the other so-called childhood diseases are especially dangerous when they strike adults, and every effort to prevent their spread is particularly timely.

Let them remember—the sick defense worker can't work, the sick trainee can't learn, and the isolation placard is an honorable symbol of defense against spread of disease, not a sign of shame.

Science News Letter, September 13, 1941

HARVEY
Pocket Observatory
TRADE MARK REG. U. S. PAT. OFF.
U. S. PATENT No 2,231,071
John A Millar Laboratory Associates, Inc
22 PLANE STREET. NEWARK, NEW JERSEY

The precision construction of this instrument insures rapid and convenient operation, and it has innumerable uses in astronomy. It is an important adjunct to any telescope.

New Machines And Gadgets

Novel Things for Better Living

Badminton rackets are now strung with nylon, same synthetic fiber so popular for ladies' hosiery. They are resistant to moisture and remain taut even on the dampest days.

A forest of ultraviolet lamps purifies the air in a large factory, the first large-scale application of these invisible rays to air conditioning in a manufacturing plant. The lamps sterilize the air as it rushes past in the ducts.

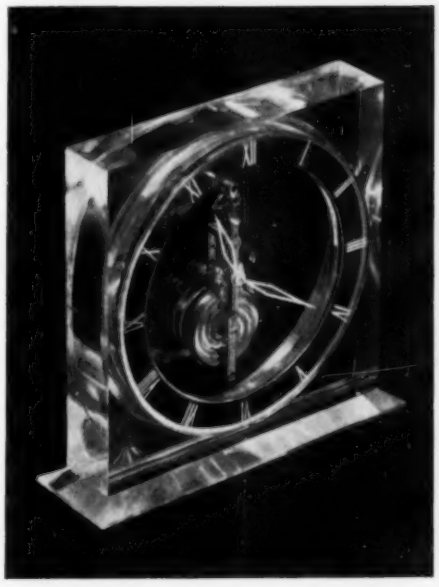
Boon to the erring typist would be a recently patented typewriter erasing key. When the key is struck, a small eraser at its tip moves sharply downward the moment it hits the platen, thus giving a good erasing stroke. If the erroneous letter is not at once removed, the strokes can be repeated. The key does not actuate the spacing or ribbon devices.

A toy lie detector, which should be lots of fun, is the subject of a recent patent. It consists of a small box which the interrogator holds in his hand while asking you a question. The movement of a pointer indicates, ostensibly, whether you answer truly or falsely. The secret of the device—but perhaps that should not be divulged. Anyhow, you have probably guessed that the movement of the pointer is under the control of the operator. But the manner is mysterious and not easy to discover.

Military airmen are now being clad in special suits for high flying that are coated from helmets to boots with a special synthetic material which makes them airtight, waterproof, and resistant to gasoline, oils, acids, and flames. The material is chemically produced from limestone, coke and salt. It is also used for raincoats, mechanics' aprons, covers for aircraft engines, tarpaulins, tents, and the like. In solid form it is used to make transparent belts and suspenders, gaskets, and many articles for Uncle Sam's Army and Navy.

A filter made of powdered metal provides a new means for filtering liquids and gases. It is used to prevent clogging up of Diesel engine nozzles and oil burner nozzles, for filtering the air supplied to paint spraying equipment, and in other ways. The porous metal can be bonded to steel and copper and so made an integral part of the rest of the machinery.

Feminine beauty can be enhanced by the use of an improved eyelash curler recently patented. The operation is simplicity itself. One squeeze of a tong-like instrument and all the eyelashes are beautifully curved upward.



What makes a new transparent clock tick anyone can plainly see, thanks to the plastic "lucite" in which it is encased. Many other beautiful objects are made from this crystal clear plastic, which is known to chemists as methyl methacrylate resin. Its remarkable transparency adapts it to many scientific and industrial uses.

Sensitized metals, plastics, and even plywood help to speed up defense production. They make it possible to photograph a pattern directly on the metal or plastic sheet which is to be cut out. Thus the pattern passes directly from the drawing board to the sheet and does not have to be redrawn on the latter. Another time-saving use is to photograph the markings directly on the dials of the many instruments required by airplanes and for other purposes. Name plates, escutcheons, and many other things can be quickly produced by the photographic process.

If you want more information on the new things described here, send a three-cent stamp to Science News Letter, 1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin 71.

Science News Letter, September 13, 1941

Languages Made *easy* By Linguaphone

Speak SPANISH, PORTUGUESE, FRENCH—or any of 29 languages—in an amazingly short time by the simplified, direct Linguaphone conversational method. *In your own home* listen to the voices of native teachers who lead you by easy steps to speak, read and write the language of your choice. Endorsed by the foremost language teachers. Used by a million home-study students. *Send for FREE Book*

LINGUAPHONE INSTITUTE
31 R.C.A. Building New York City

PSYCHIATRY

Woman Cures Depression By Putting Bullet in Brain

Attempted Suicide Causes Loss of Eye, But Worry Over Painful Arthritis and Weeping Disappeared

HOW a despairing woman cured herself of her depression by the heroic treatment of putting a bullet through her brain is disclosed by Dr. Zigmond M. Lebensohn, of George Washington University Medical School and St. Elizabeth's Hospital. The bullet is still lodged in her brain, but she has recovered and her depression has been replaced by carefree laughter.

Mrs. M, 49-year-old wife of a Washington professional man, whose name is withheld by Dr. Lebensohn, had been worried over a very severe attack of painful arthritis.

She couldn't sleep. She began to drink and smoke too much. She took veronal.

She cried frequently and brooded over the idea of suicide. She even tried it once by taking an overdose of morphine.

Finally, there was a quarrel with her husband over some trivial issue, and Mrs. M. pressed a .25 caliber pistol close to her forehead and shot herself.

She was rushed to the hospital, where X-rays showed that the bullet had torn a path nearly all the way through the frontal lobes of her brain and had looped around and become imbedded over her left eye. Cerebrospinal fluid was pouring out her nose. Her right eye became enormously swollen and projected. It was necessary to remove it.

Five weeks later she went home. Her depression was gone. But she was so unstable and drank so badly that she was sent to St. Elizabeth's mental hospital.

Although Mrs. M. had shown no abnormal neurological signs immediately after her injury, when she entered St. Elizabeth's two months and eight days later, she had several symptoms of nerve impairment. These disappeared, however.

Now she is a composed woman who takes good care of her home. Psychological tests, Dr. Lebensohn said in reporting the case (*American Journal of Psychiatry,* July) "indicate childishness, facetiousness and extroversion with no evidence of any organic change in her intellectual status."

Her indulgence in alcohol persisted after her return home and she would smuggle whisky past the maids and housekeepers by various strategies. But almost two years after the shooting, she had a single convulsive attack during which she had eight severe seizures in a row.

This scared her into cutting down on her alcohol.

Science News Letter, September 13, 1941

PHARMACY

American Drug Plants Studied As Replacements For Imports

AMERICAN drug plants are being studied as possible replacements for similar drugs that used to be imported but are now cut off, or at least threatened, by the war, the American Pharmaceutical Association was informed at its meeting in Detroit, by members who have been conducting such researches. In some instances, satisfactory replacement plants are already in sight.

Ergot, a powerful drug used in checking bleeding after childbirth, can be produced in as high quality from American-grown material as it can from the Spanish imports, it is indicated in tests reported by H. W. Youngken, Jr., E. B. Fischer and Dr. C. H. Rogers of the University of Minnesota.

Ergot is a parasitic fungus that preys upon grain. The part used in medicine is the hard, purple fruiting body, shaped like an exaggerated wheat or rye grain, that protrudes from the heads of diseased plants. These fruiting bodies are harvested by hand, and the active principle, an alkaloid known as ergotoxine, is extracted from them.

The studies of the three Minnesota pharmacologists indicate that American rye ergot yields more of the essential alkaloid than Spansh rye ergot, but that ergot from American wheat is less rich in ergotoxine than the Spanish rye material.

Imported capsicum, source of an exceedingly hot drug used externally in liniments and plasters and internally (but sparingly!) as a medicine in digestive disturbances, can be replaced by domestic tabasco peppers, Miss Carmel R. Olden and Prof. E. V. Lynn of the Massachusetts College of Pharmacy told the meeting.

In preparing the familiar condiment, tabasco sauce, the seeds and hulls of the peppers are commonly discarded, yet the two researchers found that these wastes are as rich in the essential principle, capsaicine, as any other part of the plant. They proposed that tabasco peppers replace imorted capsicum as official source of the drug, because the latter is now difficult to obtain and apparently offers no advantages in medicine.

Strychnine from American-grown sources is a possibility suggested to the meeting by Dale L. Kinsely of North Dakota Agricultural College. Strychnine is extracted from shrubby plants of the genus *Strychnos,* one species of which, *Strychnos spinosa,* has been grown successfully in Florida since 1903. Mr. Kinsely's researches have been directed at both the botany and the chemistry of this plant.

Science News Letter, September 13, 1941

RADIO

Two-Way Radio For Answering Doorbell

YOU can answer the front door with a combination radio receiver and two-way intercommunicating system. There is a separate speaker, which may be placed in another room, or by the door. Through it you may talk back and forth, when the intercommunicating feature is connected. (*Setchell Carlson, Inc., 2233 University Ave., St. Paul, Minn.*)

Science News Letter, September 13, 1941

The United States is producing about 12 times as much *gasoline* as in the first World War.

MEDICINE

War Does Not Dim Glory Of Medical Scientists

An excerpt from an address published in Science, Aug. 22.

By DR. WALTER B. CANNON

Professor of Physiology, Harvard University

BECAUSE life and health are precious and medical research is deeply concerned with protecting life and health, the triumphs of that research are put to use without regard to any national or racial difference. There is no escape from the succor which they bring. Even though the beneficiaries may despise their benefactors, they must receive the benefactions.

Is a follower of the Fuehrer bleeding to death and desperately dependent on a blood transfusion? His life is saved by methods discovered by Landsteiner, once an Austrian. Does a Japanese complain of a bewildering dizziness caused by disturbance of the internal ear? He will be in debt to Bárány, a Hungarian investigator. Does an Italian doctor wish to know whether a patient has typhoid fever? He applies observations first made by Widal, a Frenchman. Is one of our children in danger of diphtheria? His resistance to infection is tested by a process invented by Schick. Goldberger, an immigrant to New York's East Side, provided a simple preventive and treatment of pellagra, which made possible the lifting, from hosts of miserable people, the blight of that dreadful disease. And no matter in what country they may be, the tens of thousands of victims of syphilis must rest their hope of relief on a method of diagnosis first devised by Wassermann, and on a curative method discovered by Ehrlich, both Germans at a time when Germany recognized, without contempt and malignity, the value of ingenious devotion to human welfare.

All these contributors to medical knowledge have been citizens of various lands, but they would all be classed as belonging to one people. And though in the last years their people have been again savagely and sadistically persecuted, no nations, however hostile, can take from these medical representatives the honor and glory of having served as saviors of their fellow men.

Science News Letter, September 13, 1941

At least 20 varieties of *honey*, each with distinctive color and flavor, are produced commercially in California.

ENGINEERING

Telephone Light Signals Use No Extra Power

SIGNALS with a flashing neon light instead of a bell are given in a new telephone unit used where a secretary has to call several people. Unlike similar devices in the past, this requires no extra power supply, as the neon lights operate on the current normally used to ring a bell. (*Bell Telephone.*)

Science News Letter, September 13, 1941

WITH you, as with us, *defense comes first*. Our output of optical instruments is being rapidly increased to meet the defense emergency. We will endeavor to give our customers the best service possible under existing circumstances, and ask your sympathetic cooperation.

Edward Bausch . . . Microscope Maker

WHILE Pasteur and his contemporaries were fighting the combined forces of superstition and disease to lay the foundations for modern bacteriology, another young man was designing a microscope that would help immeasurably in spreading the benefits of science to all mankind.

While Pasteur was proving that heating would destroy the organisms that were making French wines turn bitter, and perfecting the pasteurizing process that makes his name immortal, in America, Edward Bausch was computing his own objectives, grinding his lenses and fitting the parts for the first Bausch & Lomb Microscope.

While Pasteur was proving his procedure for the cure of rabies by saving the life of the little Alsatian peasant, Joseph Meister, Edward Bausch was working day and night to demonstrate his belief that quality microscopes could be made in quantities and at such prices as to bring them within the reach of all students and research workers.

Today—you'll find Bausch & Lomb Microscopes in all the far corners of the world. Scientists in education, medicine and industry alike, know that no better optical instruments can be had than those bearing the Bausch & Lomb Trademark.

BAUSCH & LOMB
OPTICAL CO. • ROCHESTER, NEW YORK
ESTABLISHED 1853

AN AMERICAN SCIENTIFIC INSTITUTION PRODUCING OPTICAL GLASS AND INSTRUMENTS FOR NATIONAL DEFENSE, EDUCATION, RESEARCH, INDUSTRY AND EYESIGHT CORRECTION

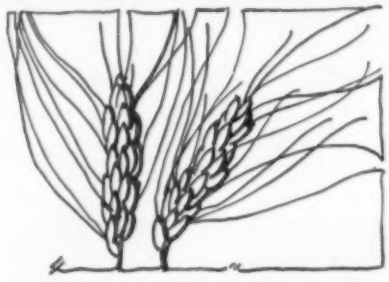
Books

SCIENCE NEWS LETTER will obtain for you any American book or magazine in print. Send check or money order to cover regular retail price ($5 if price is unknown, change to be remitted) and we will pay postage in the United States. When publications are free send 10c for handling.

Address Book Department
SCIENCE NEWS LETTER
1719 N St., N. W. Washington, D. C.

CONSERVATION

NATURE RAMBLINGS
by Frank Thone



German Dust Bowls

GERMANY seems to have made, in this war, one of the same mistakes we made in the last one, though to be sure on a smaller scale. In 1917 the cry was raised in this country, "Food will win the war!" Western farmers were encouraged to break up grasslands until then unplowed, to raise wheat for our associates in the struggle. A few years after the Armistice came drought and dust storms.

An editorial writer in the German conservation journal, *Natur und Kultur,* laments the draining of swamps and bogs, the clearing of heaths and moors, and the "improvement" of rivers, which were undertaken on a wholesale scale after the establishment of Nazi power as parts of the national campaign for agricultural self-sufficiency. Warning voices were disregarded.

Wasteland clearance was one of the favorite projects of the *Arbeitdienstkorps,* German equivalent to our Civilian Conservation Corps. They did a Teutonically thorough job of destroying trees and bushes, draining swamps, and lowering the water table under wet streamside lands. All this blossomed into grain or hay fields, or truck farms raising vegetables for the cities.

In even shorter time than it took for nature's Nemesis to overtake similar indiscretions in this country, the penalty began to be exacted. German summers since 1938 have had rather pronounced dry spells. The light, peaty soils of the drained swamps have gone with the wind.

To be sure, the areas affected are not great as compared with the one-time Dust Bowl of this country, but in a land of the relatively limited extent of the Reich they loom much larger. Also the dust storms themselves, reaching heights of only a couple of hundred yards, are as nothing compared with our black blizzards, that climbed miles into the air and swept from the Plains to the Atlantic. But again, in a land with so little soil to spare, every lost acre counts heavily.

Science News Letter, September 13, 1941

PSYCHOLOGY

Inkblot Test Shows How Alcohol Affects Character

Practically Every Trait Known to Man Is Found In Alcoholics, But None Is Characteristic

SCIENTISTS now have a "pink elephant" test to measure the effect of alcohol on your character. To aid you in "seeing things" they let you look at fancifully shaped inkblots in black and in colors.

Anyone, drunk or sober, can see pictures in these vague shapes. But just what he sees, whether spider, dancing girl, witch or cloud of smoke, reveals to the psychologist what sort of person he is.

Alcohol, which may make the victim see all sorts of things on a perfectly blank wall, nevertheless was found to have no characteristic effect on personality as revealed by the inkblot test. This was true of chronic alcoholics tested while sober as well as of normal individuals tested while in a condition of "acute mild intoxication."

The experiment on chronic alcoholics was the work of Dr. Robert V. Seliger and Dr. Seymour J. Rosenberg, psychiatrists of the Johns Hopkins University.

While many alcoholics are alike in some respects, there is no distinctive "alcoholic personality," they conclude.

The chronic alcoholic, they found from a study of 30 patients, is nearly always emotionally immature. About half are neurotic. Most are rigid, restricted personalities.

Practically every trait known to man can be found among alcoholics, they believe. But no pattern of personality is distinctive of the chronic alcoholic alone. The following motivations seem to them to be significant, however:

A self-pampering tendency. An urge for self-expression without the determination to translate the urge into action. An abnormal craving for emotional experiences which call for removal of intellectual restraint. Powerful hidden ambitions without resolve to take practical steps for attainment. A tendency to flinch from worries. An unreasonable demand for continuous happiness or excitement. An insistent craving for the feeling of self-confidence, self-importance, calm and poise.

At New York State Psychiatric Institute, Dr. Douglas McG. Kelley and Dr. C. Eugene Barrera found that alcohol does produce a change in personality, but what sort of change it is differs with the individual. There is no one sort of performance on the inkblot test that could be used as a test of intoxication.

Drinkers are of two types, these psychiatrists report in the *American Journal of Psychiatry.* Some relax and accept their emotional feelings and symptoms. The others struggle against them.

Regardless of the original personality type of the drinker, the one who fights

SCIENCE NEWS LETTER SUBSCRIPTION COUPON

To Science News Letter, 1719 N St., N. W. Washington, D. C.

☐ Start ☐ Renew my subscription to SCIENCE NEWS LETTER for ☐ 1 year, $5 ☐ 2 years, $7

Name_____

Street Address_____

City and State_____

(No extra postage to anywhere in the world)

the effect of the alcohol will, when mildly intoxicated, become very careful of what he says and does.

The one who enjoys the feeling of intoxication will become more friendly and suggestible.

There is no way to predict the personality changes that alcohol will produce, the investigators say. Apparently the only way to determine which of the different effects alcohol will have on a particular individual is to give him a drink.

Science News Letter, September 13, 1941

RESOURCES

British in Persia Owe Oil To Man Who Risked His Skin

Lively Adventures Are Recounted in Published Diary Of Sir Arnold Wilson Who Took the Arabs' Dares

CLINCHING a wartime grip on the vastly important oil resources of Persia, the British can give special thanks to a daring and tough-skinned Britisher, Sir Arnold Wilson, who years ago scouted for Persia's oil.

Sir Arnold's lively adventures, the milder of which include sleeping on the ground (the better to hear rifle shots), wading naked in marshes, and riding horseback 100 miles in one day to a business appointment, are told in a timely publication of his diary in England. Soberly titled, *South-West Persia. A political officer's diary, 1907-1914,* the volume brings back an era when most of southwest Persia had never been traversed by a surveyor.

In his first year, Sir Arnold roamed 3,000 miles of Persia on horseback and on foot. The next year, his government made him acting consul at Mohammerah near the Persian Gulf. But his surveying went on. The island where the big Abadan refineries now stand, not far from his headquarters, was one place where he worked, profitably.

To win confidence and respect of tribes through whose mountain and desert country he must travel, Wilson did anything that an Arab would, and things that an Arab wouldn't. Wilson once leaped a 15-foot chasm over a river flowing 50 feet below, when Arabs, who were supposed to dare this leap, held back. The Wilson leap won prestige.

Shooting an ibex at 600 feet was another Wilson stunt which made friends and influenced a prejudiced tribe.

When Wilson was given a detachment of Bengal lancers to guard drillers at an oil concession, he met a soldier problem in characteristic fashion. The troops grumbled over some new equipment. Too heavy, they said. Wilson took up the rifle and 200 rounds of ammunition and marched 34 miles through one night. In order to survey possible routes inland from Bushire on the Gulf, the hardy explorer traveled by day through August heat, to avoid trouble with thieves. The sun was too hot for the marauders, and even Wilson's wax candles melted at night, but the mapping went on.

On journeys where drinking water had to come from filthy and germ-laden cisterns, Wilson strained water through his shirt and somehow lived.

Returning home on leave, his idea of a change was to work his passage as a stoker, doing double shifts so efficiently that fellow stokers gave him a dinner. He liked that tremendously.

Science News Letter, September 13, 1941

INVENTION

Device on Golf Club Will Measure Your Swing

HOW STRONG is your golf swing? A recently patented device that can be slipped over the golf club, baseball bat, or any other club, makes it possible to determine the intensity of the swing. A weight is moved by centrifugal force against a spring, and a marker indicates the farthest point reached by the weight. (*Lewis T. Stumpf, Cleveland, Ohio, Patent No. 2,244,972.*)

Science News Letter, September 13, 1941

To stop *hiccups,* Dr. A. A. Thomen of New York suggests: hold a paper bag for a few minutes over nose and mouth of the hiccup victim, so that he can breathe in and out of the bag, and thus inhale carbon dioxide to stimulate respiratory nerve centers to stop the spasms.

PUBLIC HEALTH

Infantile Paralysis Cases Declining Over the Nation

THE INFANTILE paralysis and "sleeping sickness" or encephalitis outbreaks of the summer are about over, according to latest reports received at the U. S. Public Health Service headquarters in Washington, D. C.

With reports from all but two states in, the nation's total infantile paralysis cases were 556 for the week ending August 30, compared with 611 for the previous week. Reports from Pennsylvania and South Dakota may send the total figure up, but health officials are encouraged by the fact that southern states, which had all been reporting high figures, now all show declines in infantile paralysis and there are no significant increases and some declines in the number of cases in northern states.

For encephalitis, North Dakota reported 98 cases, compared to 120 the previous week, and Minnesota reported 51, instead of 95. South Dakota, with 38 cases the week of Aug. 23, has not reported any cases for the past week. Colorado reported 32, compared with 20 the previous week.

Science News Letter, September 13, 1941

A century ago, *potatoes* were comparatively unknown in India, but now they are one of the most widely grown vegetables of the country.

WEALTH AHEAD
for those who speak
SPANISH

Tremendous expansion of our South American trade. Big jobs now opening up everywhere to Spanish-speaking Americans! Learn Spanish, easiest of all languages —"the Language of Opportunity"— quickly, cheaply, thoroughly.

SPEAK SPANISH FRENCH GERMAN ITALIAN **AT ONCE!**

Just listen to this record

Most fascinating, most satisfactory method ever known for learning or perfecting yourself in a foreign language. Cortinaphone METHOD used by thousands in all walks of life who have only spare moments for learning a new language.

SENT ON FIVE DAYS' APPROVAL

You take no risk. You first PROVE—right in your own home—that this amazing "learn by listening" method CAN quickly teach you the language of your choice. Free book tells about this 5-Day Approval Offer. Mail coupon today.

Write for FREE Book Today

CORTINA ACADEMY (Language Specialists for 50 Yrs.)
Suite 6010, 105 West 40th St., New York City

Please send me—without obligation—your free booklet. I am interested in (mark):

☐ Spanish ☐ French ☐ Italian ☐ German

Name.....

Address.....

•First Glances at New Books

MILITARY AND NAVAL SCIENCE

MILITARY AND NAVAL RECOGNITION BOOK—J. W. Bunkley—*Van Nostrand*, 297 p., illus., $2.50. Are you bewildered by the assorted military millinery that is abroad in the land today? Then this is the book for you. It tells how to read the sign-language of officers' caps and shoulder-straps, how to decipher the "hash-marks" on the sleeves of NCO's and petty officers. It even goes into the insignia of the foreign forces: if you should fish a half-drowned sailor out of the sea you will be able to tell at a glance whether you've got an Italian admiral or a Spanish *commandante*. This key to the taxonomy of men in uniform is something we have all been waiting for.

Science News Letter, September 13, 1941

ANTHROPOLOGY

THE SOUTH SEAS IN THE MODERN WORLD—Felix M. Keesing—*John Day*, 391 p., $3.50. The University of Hawaii's professor of anthropology has prepared this comprehensive book on a part of the Pacific which seems less far-away, in these days of international tangles. He presents the racial background of the people, and also the economic, geographic, medical, and cultural present.

Science News Letter, September 13, 1941

GEOLOGY

INTRODUCTION TO GEOLOGY (2d ed.)—E. B. Branson and W. A. Tarr—*McGraw-Hill*, 482 p., illus., $3.75. New edition of a competently written, well illustrated text in general geology.

Science News Letter, September 13, 1941

GEOLOGY

THE WEST HIGHLANDS AND THE HEBRIDES, A Geologist's Guide for Amateurs—Alfred Harker—*Cambridge (Macmillan)*, 127 p., illus., $2. The lands described in this small book were once so remote as to have little interest for American readers. Now, with our newest outpost in Iceland, they are very much nearer, and by that token the more worth knowing about.

Science News Letter, September 13, 1941

STRATEGY

MODERN NAVAL STRATEGY—Sir Reginald Bacon and Francis E. McMurtrie—*Chemical Pub. Co.*, 208 p., $3.50. This book almost ruins itself by a couple of initial chapters which purport to be discussions of general principles but are mainly opinion. From there on, however, it redeems itself by getting down to facts, which are discussed in a most competent manner.

Science News Letter, September 13, 1941

SCIENCE—JUVENILE

OYSTERS—Work Projects Administration, Writers' Program—*A. Whitman*, 45 p., illus., 50c. For young readers who are still in the big-print stage. It gets a really astonishing lot of information into its few pages, and makes it as appetizing as the bivalves themselves.

WIND, WATER, AND AIR—Work Projects Administration, Writers' Program—*A. Whitman*, 47 p., illus., 50c. First facts about meteorology and geology, attractively presented for young readers.

THE STORY OF GLASS—Works Projects Administration, Writers' Porgram—*A. Whitman*, 47 p., illus., 50c. The essential facts about glass, from Phoenicia to Pittsburgh, compacted into a thin little book; well told and well illustrated.

Science News Letter, September 13, 1941

AERONAUTICS

AIRCRAFT PRODUCTION—E. Molloy—*Chemical Pub. Co.*, 104 p., illus., $2. Prepared in England, as Volume 2 in the "Complete Engineer" series, this book summarizes the present British practice. It should prove useful in the United States as showing what is being done under war conditions.

Science News Letter, September 13, 1941

AERONAUTICS

GLOSSARY OF AERONAUTICAL TERMS—Douglas H. Nelson—*Chemical Publishing Co.*, 112 p., illus., $1.50. Of British origin, the terms included are in accordance with Air Ministry recommendations. Since different words are used for many of these things in the United States, it should prove useful to those concerned with making airplanes for Britain, and those who want to be able to talk intelligently with visitors from overseas.

Science News Letter, September 13, 1941

AERONAUTICS

MANUAL OF AIR NAVIGATION—*Chemical Pub. Co.*, 363 p., illus., $3.50. This is a reprint of an official publication by the British government. Naturally, it emphasizes English practices and instruments, but air navigation as performed in the United States is similar enough that the book should be of interest and instruction over here as well.

Science News Letter, September 13, 1941

FICTION

LANCE, A Novel About Multicultural Men—Edward F. Haskell—*John Day*, 359 p., $2.50. Written by a man who has spent much of his life abroad, this novel of the first world war is a plea for world civilization and tolerance. "The world's sharp constriction—through rapid transport and communication, through the far-flung movements of refugees and the shifts of entire populations in recent and current wars—has produced millions of rootless, groping multi-cultural men and women. So Edward Haskell, who has been such a person himself, writes their story."

Science News Letter, September 13, 1941

AERONAUTICS—WAR

THE AIRMEN SPEAK—Officers and Men of the Royal Air Force—*Doubleday, Doran*, 299 p., $2.50. A series of brief and interesting accounts of their experiences by members of the R. A. F., originally given as broadcasts over the B. B. C.

Science News Letter, September 13, 1941

ZOOLOGY

DEVESCOVINID FLAGELLATES OF TERMITES I. THE GENUS DEVESCOVINA—Harold Kirby—*Univ. of Calif. Press*, 91 p., 9 pl., $1.25.

Science News Letter, September 13, 1941

BIBLIOGRAPHY

DIRECTORY OF MICROFILM SOURCES, Including Photostat Service—Ross C. Cibella, comp.—*Special Libraries Ass'n*, 56 p., 75c. For anyone who needs to have access to the literature of the world through microfilm this is an invaluable directory of where microfilm can be obtained. In addition to lists of libraries furnishing this service, order blanks are reproduced in facsimile.

Science News Letter, September 13, 1941

CHEMISTRY—ECONOMICS

AIR RAID DEFENSE (CIVILIAN)—Curt Wachtel—*Chemical Pub. Co.*, 240 p., $3.50. Everyone who wonders what should be done to protect against air raids, improbable as they may seem here in the U. S. A., should read this book, written under a grant from the Emergency Committee in Aid of Displaced Foreign Medical Scientists, by the scientist who organized the pharmacological section of the Kaiser Wilhelm Institute during the World War. Let us hope that such precautions as detailed here will be put into effect before the last minute.

Science News Letter, September 13, 1941